

AUC 분말의 환원속도에 관한 연구  
**A Study of Reduction Kinetics of AUC Powder**

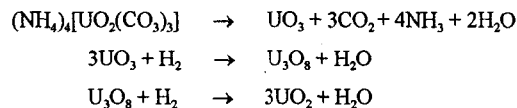
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요 약

AUC 분말의 배소·환원에 대한 연구를 수소분위기에서 TG-DTA 를 사용하여 수행하였다. AUC 분말의 열분해 과정 중 다양한 상 변화 특성을 XRD 로 확인하였다. AUC 분말의 열분해 반응 메커니즘은

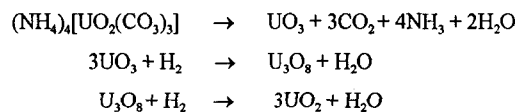


와 같은 3 단계로 나타났다. AUC 분말의 배소·환원 속도는 비등온열중량법으로 구하였으며, Data 해석은 Osawa 방법과 Zsako 방법으로 구하였다. 그 결과는 다음과 같다.

Reaction	Mechanism	E(Kcal/mole)
AUC → UO <sub>3</sub>	2 <sup>nd</sup> nucleation and growth	19.5
UO <sub>3</sub> → U <sub>3</sub> O <sub>8</sub>	3 <sup>rd</sup> nucleation and growth	30.12
U <sub>3</sub> O <sub>8</sub> → UO <sub>2</sub>	4 <sup>th</sup> nucleation and growth	31.43

ABSTRACT

A calcination and reduction of AUC has been carried out by using TG-DTA in H<sub>2</sub> atmosphere. Phases of various intermediates obtained during thermal analysis of AUC were confirmed by XRD. As results, AUC was calcined and reduced by three steps as follows;



And, the calcination and reduction kinetics of AUC has been determined by non-isothermal method and the analysis of kinetic data was made by Osawa and Zsako methods. The results were as follows;

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